

REMARKS

This is a complete and timely response to the Final Office Action sent electronically on January 18, 2008. Claims 1-13 are pending in the application. Claims 1, 9, 12 and 13 are amended. The subject matter of amended claims 1, 9, 12 and 13 is supported in at least the sixth paragraph on page 5 of Applicants' originally filed specification. Accordingly, no new matter is added. In light of the foregoing amendments and following remarks, Applicants request reconsideration of the application and pending claims.

Claim Rejections Under 35 USC § 103 – Claims 1-13

A. Statement of the Rejections

Claims 1-3, 9 and 12 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,760,391 to Alb *et al.* (hereinafter, *Alb*) in view of applicant admitted prior art (AAPA) and U.S. Patent No. 7,292,608 to Nowell *et al.*, hereafter *Nowell*.

Claims 4, 5 and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Alb*, the AAPA and *Nowell*, as applied to claims 1 and 9, in view of U.S. Patent No. 5,808,760 to Gfeller, hereafter *Gfeller*.

Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over over *Alb*, the AAPA and *Nowell*, as applied to claim 1, in view of U.S. Patent No. 6,690,650 to Stener, hereafter *Stener*.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Alb*, the AAPA and *Nowell*, as applied to claims 1, 9 and 10, in further view of U.S. Patent No. 6,647,058 to Bremer, hereafter *Bremer*.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Alb*, the AAPA, *Nowell* and *Gfeller* as applied to claims 9 and 10, in further view of U.S. Patent No. 6,647,058 to Bremer, hereafter *Bremer*.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over over *Alb*, the AAPA and *Nowell* and *Bremer*.

B. Discussion of the Rejections

Applicants' independent claims 1, 9 and 12, as amended, include features that are not found in the proposed combinations.

For a claim to be properly rejected under 35 U.S.C. § 103, "[t]he PTO has the burden under section 103 to establish a *prima facie* case of obviousness. In order to make a proper *prima facie* case of obviousness; three basic criteria must be met, as set forth in MPEP § 706.02(j). First, there must be some suggestion or motivation; either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references, when combined, must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicant's disclosure."

1. Claims 1-3

Applicants' claim 1, as amended, is directed to a rate adaptive system for optical communication networks which includes at least "an optical fibre linked to said optical transceivers, said system configured to cause said optical transceivers to transmit and receive optical signals at an initial rate and to adapt said initial rate based upon an error condition responsive to an optical signal parameter by causing said optical transceivers to transmit and receive at a different rate, wherein a rate of data being forwarded per unit time is adjusted by inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned features of claim 1.

In contrast with Applicants' claimed system, the proposed combination of *Alb*, *AAPA* and *Nowell* is entirely silent regarding Applicants' claimed optical transceivers that "transmit and receive at a different rate, wherein a rate of data being forwarded

per unit time is adjusted by inserting invalid data which can be identified and ignored by a downstream process.”

Alb (FIGs. 1, 3 and 4) shows various embodiments of a system that couples a central office 20 to customer premises (CPE 42, CPE 44 and CPE 46) via respective links 12, 14 and 16. The link 12, in the embodiments illustrated in FIG. 3 and FIG. 4, is clearly shown as a twisted-pair of copper wires typical in the communication channel between a central office and a customer premise. *Alb*, column 4, lines 20-24, indicates that links 12, 14 and 16 can be made up of wider-bandwidth physical media such as coaxial cable, optical fiber and radio.

Alb is cited for the alleged disclosure of an optical system capable of transmitting and receiving signals at a plurality of rates to each other. Applicants disagree. *Alb* does not teach an optical system. *Alb* teaches a system that specifically uses the twisted-pair of copper wires between a central office and a customer premises modem. Accordingly, the communication system disclosed in *Alb* executes a line rate change by changing the rate of a central office modulator. Changing the rate of a central office modulator does not disclose, teach or suggest a rate of data being forwarded per unit time that is adjusted by inserting invalid data which can be identified and ignored by a downstream process.

AAPA is cited for the alleged teaching that error conditions other than synchronization could be used for example code word violations on the received optical signal or low received optical modulation amplitude. These features are no longer included in amended claim 1.

Nowell is cited for its disclosure of a code word violation that asserts a loss of synchronization condition which enables error detection by monitoring for invalid codewords. These features are no longer included in amended claim 1.

Thus, AAPA and *Nowell* are cited for their alleged disclosure of various features other than the aforementioned features of amended claim 1. Applicants respectfully submit that the combination of AAPA and *Nowell* does not add anything to the disclosure of *Alb* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Alb*, AAPA and *Nowell* do not teach all features of independent claim 1.

Consequently, favorable reconsideration and withdrawal of the rejection of independent claim 1 under 35 U.S.C. § 103 are respectfully requested.

Further, Applicants respectfully submit that dependent claims 2 and 3, which depend directly from allowable independent claim 1 and include all the features of claim 1, are allowable for at least the reason that they depend from an allowable independent claim. *In re Fine*, 837 F.2d 1071, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1998).

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claims 2 and 3 under 35 U.S.C. § 103 are respectfully requested.

2. Claim 9

Applicants' claim 9, as amended, is directed to a rate adaptive method for operating an optical communication network which includes the step of "adapting said rate based upon said evaluation by transmitting and receiving at a different rate, wherein transmitting and receiving comprises inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned features of claim 9.

In contrast with Applicants' claimed method, the proposed combination of *Alb*, *AAPA* and *Nowell* is entirely silent regarding Applicants' claimed step of "adapting said rate based upon said evaluation by transmitting and receiving at a different rate, wherein transmitting and receiving comprises inserting invalid data which can be identified and ignored by a downstream process."

Alb (FIGs. 1, 3 and 4) shows various embodiments of a system that couples a central office 20 to customer premises (CPE 42, CPE 44 and CPE 46) via respective links 12, 14 and 16. The link 12, in the embodiments illustrated in FIG. 3 and FIG. 4, is clearly shown as a twisted-pair of copper wires typical in the communication channel between a central office and a customer premise. *Alb*, column 4, lines 20-24, indicates that links 12, 14 and 16 can be made up of wider-bandwidth physical media such as coaxial cable, optical fiber and radio.

Alb is cited for the alleged disclosure of an optical system capable of transmitting and receiving signals at a plurality of rates to each other. Applicants disagree. As shown above, *Alb* teaches a system that uses the twisted-pair of copper wires between a central office and a customer premises modem. The communication system disclosed in *Alb* executes a line rate change by changing the rate of a central office modulator. Changing the rate of a central office modulator does not disclose, teach or suggest a rate of data being forwarded per unit time that is adjusted by inserting invalid data which can be identified and ignored by a downstream process.

AAPA is cited for the alleged teaching that error conditions other than synchronization could be used for example code word violations on the received optical signal or low received optical modulation amplitude. These features are no longer included in amended claim 9.

Nowell is cited for its disclosure of a code word violation that asserts a loss of synchronization condition which enables error detection by monitoring for invalid codewords. These features are no longer included in amended claim 9.

Thus, AAPA and *Nowell* are cited for their alleged disclosure of various features other than the aforementioned features of amended claim 9. Applicants respectfully submit that the combination of AAPA and *Nowell* does not add anything to the disclosure of *Alb* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Alb*, AAPA and *Nowell* do not teach all features of independent claim 9.

Consequently, favorable reconsideration and withdrawal of the rejection of independent claim 9 under 35 U.S.C. § 103 are respectfully requested.

3. Claim 12

Applicants' claim 12, as amended, is directed to an optical transceiver module for a rate adaptive system for optical communication networks which includes "means for adapting an optical signal transmission rate by transmitting and receiving at a different rate, wherein transmitting and receiving comprises adjusting ratios in a phase-locked loop circuit."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned features of claim 12.

In contrast with Applicants' claimed optical transceiver module, the proposed combination of *Alb*, *AAPA* and *Nowell* is entirely silent regarding Applicants' claimed "means for adapting an optical signal transmission rate by transmitting and receiving at a different rate, wherein transmitting and receiving comprises adjusting ratios in a phase-locked loop circuit."

Alb (FIGs. 1, 3 and 4) shows various embodiments of a system that couples a central office 20 to customer premises (CPE 42, CPE 44 and CPE 46) via respective links 12, 14 and 16. The link 12, in the embodiments illustrated in FIG. 3 and FIG. 4, is clearly shown as a twisted-pair of copper wires typical in the communication channel between a central office and a customer premise. *Alb*, column 4, lines 20-24, indicates that links 12, 14 and 16 can be made up of wider-bandwidth physical media such as coaxial cable, optical fiber and radio.

Alb is cited for the alleged disclosure of an optical system capable of transmitting and receiving signals at a plurality of rates to each other. Applicants disagree. As shown above, *Alb* teaches a system that uses the twisted-pair of copper wires between a central office and a customer premises modem. The communication system disclosed in *Alb* executes a line rate change by changing the rate of a central office modulator. Changing the rate of a central office modulator does not disclose, teach or suggest adjusting ratios in a phase-locked loop circuit.

AAPA is cited for the alleged teaching that error conditions other than synchronization could be used for example code word violations on the received optical signal or low received optical modulation amplitude. These features are no longer included in amended claim 12.

Nowell is cited for its disclosure of a code word violation that asserts a loss of synchronization condition which enables error detection by monitoring for invalid codewords. These features are no longer included in amended claim 12.

Thus, *AAPA* and *Nowell* are cited for their alleged disclosure of various features other than the aforementioned features of amended claim 12. Applicants

respectfully submit that the combination of AAPA and *Nowell* does not add anything to the disclosure of *Alb* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Alb*, AAPA and *Nowell* do not teach all features of independent claim 12.

Consequently, favorable reconsideration and withdrawal of the rejection of independent claim 12 under 35 U.S.C. § 103 are respectfully requested.

4. Claims 4 and 5

Applicants' dependent claims 4 and 5 include at least one feature that is not found in the proposed combination. Specifically, dependent claims 4 and 5 depend from claim 1, which includes at least "an optical fibre linked to said optical transceivers, said system configured to cause said optical transceivers to transmit and receive optical signals at an initial rate and to adapt said initial rate based upon an error condition responsive to an optical signal parameter by causing said optical transceivers to transmit and receive at a different rate, wherein a rate of data being forwarded per unit time is adjusted by inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned feature of claims 4 and 5.

As shown above, the combined teachings of *Alb*, AAPA and *Nowell* do not teach all features of independent claim 1. Missing from the combined teachings is any mention or suggestion whatsoever of adjusting a data rate "by inserting invalid data which can be identified and ignored by a downstream process."

Gfeller is cited for its alleged disclosure of four predetermined rates that provide flexibility in system design and simplification of the integration of systems operating with different data rates. *Gfeller* specifically teaches adapting the data rate and/or the optical power of the transmitter in dependence of a signal-to-noise ratio of the receiver. Applicants respectfully submit that *Gfeller* does not add anything to the

combination of *Alb*, *AAPA* and *Nowell* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings do not teach all features of dependent claims 4 and 5, which depend directly or indirectly from claim 1 and includes all the features of claim 1.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claims 4 and 5 under 35 U.S.C. § 103 are respectfully requested.

5. Claim 10

Applicants' dependent claim 10 includes at least one feature that is not found in the proposed combination. Specifically, dependent claim 10 depends from claim 9, which includes at least the step of "adapting said rate based upon said evaluation by transmitting and receiving at a different rate, wherein transmitting and receiving comprises inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned feature of claim 10.

As shown above, the combined teachings of *Alb*, *AAPA* and *Nowell* do not teach all features of independent claim 9. Missing from the combined teachings is any mention or suggestion whatsoever of adapting a data rate "by inserting invalid data which can be identified and ignored by a downstream process."

Gfeller is cited for its alleged disclosure of four predetermined rates that provide flexibility in system design and simplification of the integration of systems operating with different data rates. *Gfeller* specifically teaches adapting the data rate and/or the optical power of the transmitter in dependence of a signal-to-noise ratio of the receiver. Applicants respectfully submit that *Gfeller* does not add anything to the combination of *Alb*, *AAPA* and *Nowell* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings do not teach all features of dependent claim 10, which depends directly from claim 9 and includes all the features of claim 9.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claim 10 under 35 U.S.C. § 103 are respectfully requested.

6. Claims 6 and 7

Applicants' dependent claims 6 and 7 include at least one feature that is not found in the proposed combination. Specifically, dependent claims 6 and 7 depend from claim 1, which includes at least "an optical fibre linked to said optical transceivers, said system configured to cause said optical transceivers to transmit and receive optical signals at an initial rate and to adapt said initial rate based upon an error condition responsive to an optical signal parameter by causing said optical transceivers to transmit and receive at a different rate, wherein a rate of data being forwarded per unit time is adjusted by inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned feature of claims 6 and 7.

As shown above, the combined teachings of *Alb*, *AAPA* and *Nowell* do not teach all features of independent claim 1. Missing from the combined teachings is any mention or suggestion whatsoever of adjusting a data rate "by inserting invalid data which can be identified and ignored by a downstream process."

Stener is cited for its alleged disclosure of setting an initial rate at the highest possible rate and upon detecting a link failure, adjusting the rate of transmission by an order of magnitude. *Stener* specifically teaches shifting from one physical interface device operating at 100 MB/sec to a second physical interface device operating at 10 MB/sec in response to detected errors. Applicants respectfully submit that *Stener* does not add anything to the combination of *Alb*, *AAPA* and *Nowell* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings do not teach all features of dependent claims 6 and 7, which depend directly from claim 1 and include all the features of claim 1.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claims 6 and 7 under 35 U.S.C. § 103 are respectfully requested.

7. Claim 8

Applicants' dependent claim 8 includes at least one feature that is not found in the proposed combination. Specifically, dependent claim 8 depends from claim 1, which includes at least "an optical fibre linked to said optical transceivers, said system configured to cause said optical transceivers to transmit and receive optical signals at an initial rate and to adapt said initial rate based upon an error condition responsive to an optical signal parameter by causing said optical transceivers to transmit and receive at a different rate, wherein a rate of data being forwarded per unit time is adjusted by inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned feature of claim 8.

As shown above, the combined teachings of *Alb*, *AAPA* and *Nowell* do not teach all features of independent claim 1. Missing from the combined teachings is any mention or suggestion whatsoever of adjusting a data rate "by inserting invalid data which can be identified and ignored by a downstream process."

Bremer is cited for its alleged disclosure of a network management system used by a technician to target communication links that would benefit the most from power and/or data rate adaptation. *Bremer* specifically teaches shifting from one data rate to another next lowest data rate in a table of data rates in response to a measured signal-to-noise ratio. Applicants respectfully submit that *Bremer* does not add anything to the combination of *Alb*, *AAPA* and *Nowell* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings do not teach all features of dependent claim 8, which depends directly from claim 1 and includes all the features of claim 1.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claim 8 under 35 U.S.C. § 103 are respectfully requested.

8. Claim 11

Applicants' dependent claim 11 includes at least one feature that is not found in the proposed combination. Specifically, dependent claim 11 depends indirectly from claim 9, which includes at least the step of "adapting said rate based upon said evaluation by transmitting and receiving at a different rate, wherein transmitting and receiving comprises inserting invalid data which can be identified and ignored by a downstream process."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned features of claim 9.

As shown above, the combined teachings of *Alb*, *AAPA* and *Nowell* do not teach all features of independent claim 9. Missing from the combined teachings is any mention or suggestion whatsoever of adjusting a data rate "by inserting invalid data which can be identified and ignored by a downstream process."

Gfeller is cited for its alleged disclosure of four predetermined rates that provide flexibility in system design and simplification of the integration of systems operating with different data rates. *Gfeller* specifically teaches adapting the data rate and/or the optical power of the transmitter in dependence of a signal-to-noise ratio of the receiver. Applicants respectfully submit that *Gfeller* does not add anything to the combination of *Alb*, *AAPA* and *Nowell* that would remedy the aforementioned deficiency.

Bremer is cited for its alleged disclosure of a network management system used by a technician to target communication links that would benefit the most from power and/or data rate adaptation. *Bremer* specifically teaches shifting from one data

rate to another next lowest data rate in a table of data rates in response to a measured signal-to-noise ratio. Applicants respectfully submit that *Bremer* does not add anything to the combination of *Alb*, *AAPA*, *Nowell* and *Gfeller* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings do not teach all features of dependent claim 11, which depends indirectly from claim 9 and includes all the features of claim 9.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claim 11 under 35 U.S.C. § 103 are respectfully requested.

9. Claim 13

Applicants' claim 13, as amended, is directed to a rate adaptive method for operating an optical communication network that includes the step of "adapting said rate based upon said evaluating by transmitting and receiving at a different rate, wherein transmitting and receiving comprises reducing the number of active channels in a multiple channel parallel interconnect."

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reason, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least the aforementioned features of claim 13.

In contrast with Applicants' claimed rate adaptive method for operating an optical communication network, the proposed combination of *Alb*, *AAPA*, *Nowell* and *Bremer* is entirely silent regarding Applicants' claimed "adapting said rate based upon said evaluating by transmitting and receiving at a different rate, wherein transmitting and receiving comprises reducing the number of active channels in a multiple channel parallel interconnect."

Alb (FIGs. 1, 3 and 4) shows various embodiments of a system that couples a central office 20 to customer premises (CPE 42, CPE 44 and CPE 46) via respective links 12, 14 and 16. The link 12, in the embodiments illustrated in FIG. 3 and FIG. 4, is clearly shown as a twisted-pair of copper wires typical in the communication channel between a central office and a customer premise. *Alb*, column 4, lines 20-24,

indicates that links 12, 14 and 16 can be made up of wider-bandwidth physical media such as coaxial cable, optical fiber and radio.

Alb is cited for the alleged disclosure of an optical system capable of transmitting and receiving signals at a plurality of rates to each other. Applicants disagree. As shown above, *Alb* teaches a system that uses the twisted-pair of copper wires between a central office and a customer premises modem. The communication system disclosed in *Alb* executes a line rate change by changing the rate of a central office modulator. Changing the rate of a central office modulator does not disclose, teach or suggest reducing the number of active channels in a multiple channel parallel interconnect.

AAPA is cited for the alleged teaching that error conditions other than synchronization could be used for example code word violations on the received optical signal or low received optical modulation amplitude. These features are no longer included in amended claim 13.

Nowell is cited for its disclosure of a code word violation that asserts a loss of synchronization condition which enables error detection by monitoring for invalid codewords. These features are no longer included in amended claim 13.

Thus, AAPA and *Nowell* are cited for their alleged disclosure of various features other than the aforementioned features of amended claim 13. Applicants respectfully submit that the combination of AAPA and *Nowell* does not add anything to the disclosure of *Alb* that would remedy the aforementioned deficiency.

Bremer is cited for its disclosure of a test data that can be transmitted to determine whether the test data support the data rate. Applicants respectfully submit that the combination of AAPA, *Nowell* and *Bremer* does not add anything to the disclosure of *Alb* that would remedy the aforementioned deficiency.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Alb*, AAPA, *Nowell* and *Bremer* do not teach all features of independent claim 13.

Consequently, favorable reconsideration and withdrawal of the rejection of independent claim 13 under 35 U.S.C. § 103 are respectfully requested.

CONCLUSION

For at least the reasons set forth above, Applicants respectfully submit that pending claims 1-13 are allowable over the cited art of record and the present application is in condition for allowance. Accordingly, a Notice of Allowance is respectfully solicited. Should the Examiner have any comments regarding the Applicants' response, Applicants request that the Examiner telephone Applicants' undersigned attorney.

Respectfully submitted,

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